What is claimed is:

1. A metal oxide powder except α-alumina, comprising polyhedral particles having at least 6 planes each, a number average particle size of from 0.1 to 300 μm, and a D_{90}/D_{10} ratio of 10 or less where D_{10} and D_{90} are particle sizes at 10 % and 90 % accumulation, respectively from the smallest particle size side in a cumulative particle size curve of the particles.

2. The metal oxide powder according to claim 1, wherein said D_{90}/D_{10} ratio is 5 or less.

3. The metal oxide powder according to claim 2, wherein a ratio of an agglomerated particle size to a primary particle size is from 1 to 6.

4. The metal oxide powder according to claim 3, wherein said ratio of a primary particle size to an agglomerated particle size is from 1 to 3.

5. The metal oxide powder according to any one of claims 1 to 4, wherein said metal oxide is a simple metal oxide of a metal element selected from the group consisting of the metal elements of the Groups Ib, II, III, IV, V, VI, VII and VIII of the Periodic Table, except α-alumina powder.

6. The metal oxide powder according to any one of clams 1 to 4, wherein said metal oxide is a simple metal oxide of titanium.

7. The metal oxide powder according to any one of claims 1 to 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of magnesium, zirconium and iron.

8. The metal oxide powder according to any one of claims 1 to 4, wherein said metal oxide is a simple metal oxide of cerium.

9. The metal oxide powder according to any one of claims 1 to 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of indium and tin.

10. The metal oxide powder according to any one of claims 1 to 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of zinc, cadmium, gallium, germanium, niobium, tantalum, antimony, bismuth, chromium, molybdenum, manganese, cobalt, nickel and uranium.

11. A rutile type titanium oxide powder comprising polyhedral particles each having at least 8 planes.

12. The rutile type titanium oxide powder according to claim 11, wherein a ratio of an agglomerated particle size to a primary particle size is from 1 to 2, and a BET specific surface area is from 0.1 to 10 m^2/g.

13. A method for producing a metal oxide powder having a narrow particle size distribution except α-alumina, comprising calcining a metal oxide powder or a metal oxide precursor powder in the presence or absence of a seed crystal in an atmosphere containing at least one gas selected from the group consisting of (1) a hydrogen halide, (2) a component prepared from a molecular halogen and steam and (3) a molecular halogen.

14. The method according to claim 13, wherein said calcination is carried out in the presence of a seed crystal.

15. The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is [a] hydrogen halide.

16. The method according to claim 15, wherein said hydrogen halide is hydrogen chloride or hydrogen bromide.

17. The method according to claim 15, wherein said hydrogen halide is hydrogen fluoride.

18. The method according to claim 15, wherein a concentration of said hydrogen halide is at least 1 vol. % of said atmospheric gas.

19. The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is said component prepared from a molecular halogen and steam.

20. The method according to claim 19, wherein said molecular halogen is chlorine or bromine.

21. The method according to claim 19, wherein said molecular halogen is fluorine.

22. The method according to claim 19, wherein said component is prepared from at least 1 vol. % of said molecular halogen and at least 0.1 vol. % of steam, both based on said atmosphere gas.

23. The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is a molecular halogen which is chlorine or bromine, and a concentration of said molecular halogen in said atmosphere gas is at least 1 vol. %.

24. The method according to claim 13, wherein said metal oxide powder or metal oxide precursor powder has a bulk density of 40 % or less of a theoretical value.

25. The method according to claim 14, wherein said seed crystal had a bulk density of 40 % or less of a theoretical value.

26. The method according to claim 13 or 14, wherein said metal oxide having a narrow particle size distribution except α-alumina is formed on a site where said metal oxide powder or metal oxide precursor powder to be calcined is present.

27. The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder to be calcined is a metal oxide powder or metal oxide precursor powder of a metal element selected from the group consisting of the metal elements of the Groups Ib, II, III, IV, V, VI, VII and VIII of the Periodic Table.

28. The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of magnesium, titanium, zirconium and iron.

29. The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of cerium.

30. The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of indium and tin.

31. The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of zinc, cadmium, gallium, germanium, niobium, tantalum, antimony, bismuth, chromium, molybdenum, manganese, cobalt, nickel and uranium.

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